CLAIMS

We claim:

1. An active standby system for a control system, the active standby system comprising:

a first and a second controller, each controller having an operating state; and,

a high speed fiber optic network cable operably connecting the first and second controllers for transferring data between the controllers at a rate of at least 100 Mb/s.

2. The active standby system of claim 1 wherein each controller comprises:

a processor;

a co-processor;

an operating system executed by the processor; and,

a co-operating system executed by the co-processor wherein the operating system and the co-operating system cooperate to transfer data between the first and second controllers.

3. The active standby system of claim 1, wherein each controller further comprises a network module having a network identifier wherein the network identifier is determined by the operating state of its respective controller.

4. The active standby system of claim 3 wherein each controller further comprises a remote IO head and each remote IO head is operably connected together and to a remote IO drop.

5. The active standby system of claim 4 further comprising at least one processor device operably connected to the first and second controllers.

6. The active standby system of claim 3 wherein the network identifier is an Internet Protocol address.

7. The active standby system of claim 3 wherein the network identifier is a Media Access Control address.

8. The active standby system of claim 1 wherein each controller is operably connected to a processor unit.

9. A method of providing an active standby control system comprising the steps of:

providing a first and a second controller, each controller having an operating state; and,

forming a network by operably connecting the controllers with a fiber optic cable for transferring data between the first controller and the second controller at a rate of at least 100 Mb/s.

10. The method of claim 9 further including the steps of:

assigning a network identifier to each controller; and,

sensing the operating state of each controller, wherein the network identifier of each controller is determined by the operating state of each respective controller.

11. The method of claim 10 wherein each controller comprises:

a processor;

a co-processor;

an operating system executed by the processor; and,

a co-operating system executed by the co-processor wherein the operating system and the co-operating system cooperate to transfer data between the first and second controllers via the fiber optic cable.

12. The method of claim 9 wherein the network is an Ethernet network.

13. The method of claim 10 wherein the address identifier is an Internet Protocol address.

14. The method of claim 10 wherein the address identifier is a Media Access Control address.

15. A method of providing an active standby control system comprising a first and second controller, each controller having an operating state, the method comprising the steps of:

forming a network by operably connecting the first and second controllers with a fiber optic cable for transmitting data between the controllers at a rate of at least 100 Mb/s;

placing one controller in a primary state and the other controller in a secondary state;

assigning a network identifier to designate each controller;

sensing the operating state of the primary mode controller;

swapping the network identifiers between the first and second controllers;

transmitting a reverse address resolution protocol (RARP) message on the network, wherein the newly designated primary controller resumes network operations.

16. The method of claim 15 wherein the network is an Ethernet network.

17. The method of claim 15 wherein the network identifier is an Internet Protocol address.

18. The method of claim 15 wherein the network identifier is a Media Access Control address.

19. The method of claim 15 further including the step of aborting all connections to the first and second controllers.

20. The method of claim 15 wherein the processor, co-processor, operating system and co-operating system are embedded in Flash RAM.